



National Transportation Safety Board



Embraer EMB-500
Gaithersburg, Maryland
December 8, 2014

Investigator-in-Charge
Presentation



Runway 14

Accident Site

Flight

- Pilot, 2 passengers and 3 people in the house fatally injured
- Instrument flight rules
- Operated under Part 91
- Go-team – launched

Flight

- Combined Recorder (CVDR)
- Takeoff and cruise were uneventful
- 15 minutes in icing conditions
- On course and glidepath until 300' above ground level
- Airplane rolled right 21 degrees

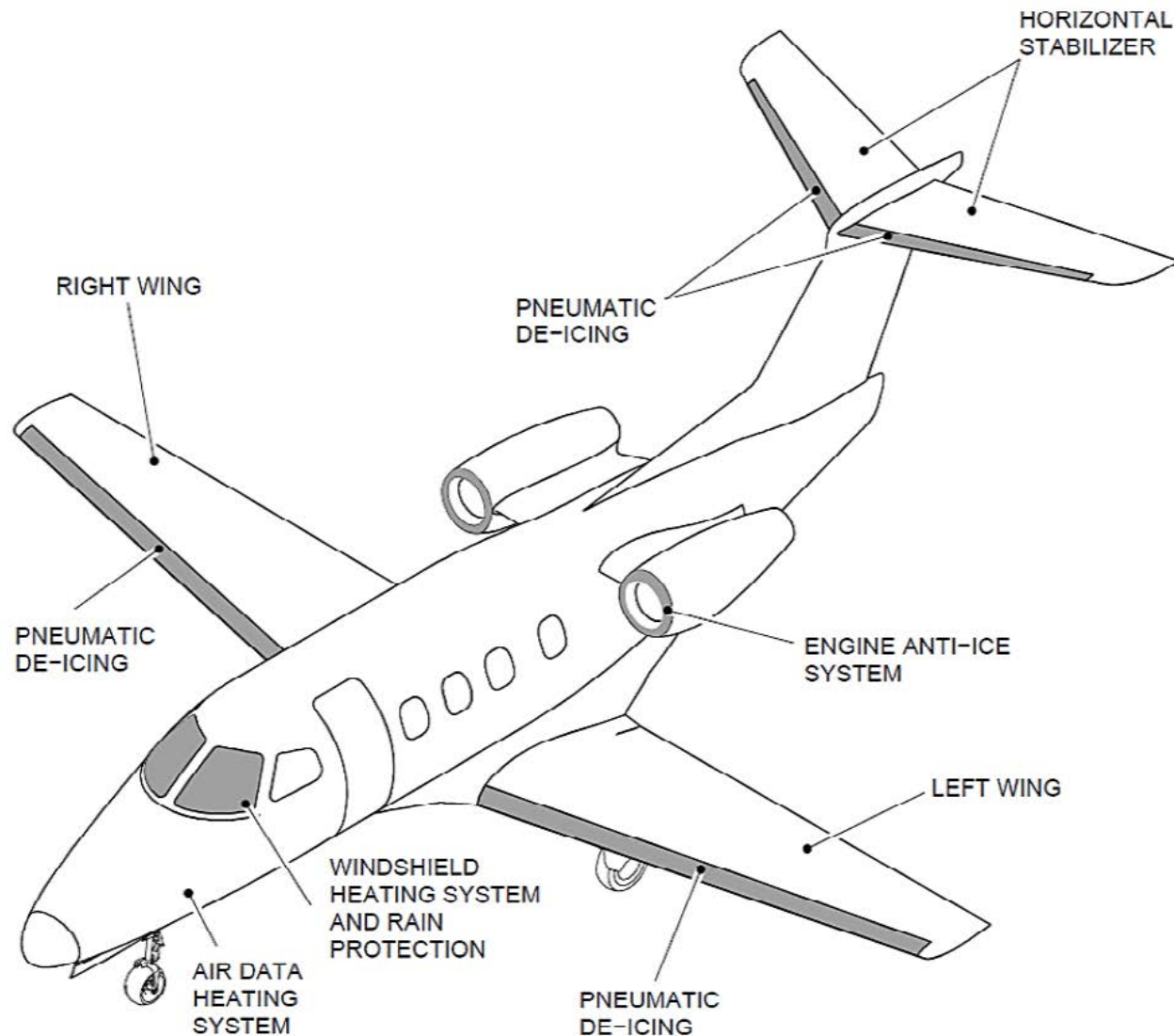
Flight

- 1 second later at 88 knots, aural stall warning sounds
- Stall warning continues
- Airplane goes through series of roll oscillations
- Rolls more than 100 degrees before impact

Airplane Performance Study

- Analysis of accident flight data
- Accident flight – approximately 16 degrees angle-of-attack
- Wing without ice – 28.4 degrees angle-of-attack
- Stall characteristics consistent with ice accumulation

EMB-500 – Certified for Icing



EMB-500 – Ice Protection Systems

- Pitot-Static System Heat – ON
- Engine anti ice system - OFF
- Wing / horizontal stabilizer deice boot system – OFF
- Resultant: Stall at low altitude

Safety Issues

- Single-pilot, turbofan, type rating
- Automatic alerting for icing
- Enhanced pilot training
guidelines for flight in icing
conditions

Participants to the Investigation

- Federal Aviation Administration
- ICAO Annex 13 Accredited Representatives
 - Brazil Aeronautical Accidents Investigation and Prevention Center (CENIPA)
 - Technical advisor - Embraer
 - Transportation Safety Board of Canada
 - Technical advisor - Pratt & Whitney Canada



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